REMARKS

In the Final Rejection dated May 5, 2005, claims 1-4, 6-8 and 10-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bullock et al. in view of Barton. Claims 5 and 9 were rejected under 35 U.S.C. §103(a) in view of Bullock et al. and Barton, further in view of Berson.

Applicants note with appreciation the interview courteously afforded the undersigned counsel for the Applicants on July 14, 2005, wherein the above amendments to claim 1 were proposed and discussed. The Examiner's supervisor Mr. Shah, also was present at the interview.

In addition to the aforementioned amendments to independent claim 1, claim 2 has been amended to correct typographical errors therein and claims 6, 10 and 11 have been amended to maintain consistency with amended independent claim 1. Claims 13-24 have been cancelled, since those method claims are now the subject of co-pending divisional application Serial No. 10/842,.694, also being examined by the present Examiner.

In general, as discussed at the interview, it is Applicants' position that neither the Bullock et al. nor the Barton reference discloses or suggests any details for conducting a warm-up operation of a printer, and clearly do not disclose or suggest any details with regard to a fast warm-up.

The Examiner acknowledged that the Bullock et al. reference does not disclose a sensor connected to the drive unit for measurement of ambient temperature, with the control unit being programmed to implement at least one measurement of the ambient temperature with the sensor, and to determine warm-

up data for a fast start for a current warm-up cycle dependent on the ambient temperature and dependent on at least one predetermined condition.

As discussed at the interview, although the Examiner agrees that the Bullock et al. reference does not explicitly use the term "warm-up," the Examiner stated the Bullock et al. reference "naturally implies" an arrangement for data follow-up for a warm-up cycle of an ink jet printhead. For this position, the Examiner relied on the statement in the Bullock et al. reference regarding the initiation of a printing operation (column 3, lines 1-2) as well as the teaching in the Bullock et al. reference that the contents of the memories 16 and 28 are "instrumental in enabling real time control of ink jet printer 1 to produce high quality printed media." The Examiner stated the term "real time control" implies that the memory parameters of Bullock et al. are used throughout the printing operation, such as during the printing initiation (i.e. warm-up). The Examiner also stated the Bullock et al. reference discloses the use of memory when an ink cartridge is replaced, and it is well known to one of ordinary skill in the art that a printer needs to be warmed up and calibrated to its new cartridge before it can successfully print. Lastly, the Examiner stated the Bullock et al. reference discloses temperature sense resistor calibration data and firing energy parameters as examples of memory parameters, and the Examiner stated it is well known to those of ordinary skill in the art that these parameters are crucial for a warm-up operation, since a warm-up operation usually involves the heating of the printhead.

Also at the interview, the Examiner noted the language at column 4, lines 18-21 of the Bullock et al. reference, stating that each of memories 16 and 28 includes both factory-written data and printer-recorded data.

Applicants acknowledge that, as in any printer, it is likely that the printer disclosed in the Bullock et al. reference must proceed through some type of warm-up routine before being ready to print. Nevertheless, claim 1 sets forth an apparatus for performing a specific manner of conducting a fast warm-up, and the mere fact that it is likely the Bullock et al. apparatus performs some type of general warm-up procedure does not constitute a teaching or suggestion to a person of ordinary skill in the field of printer design to conduct a fast warm-up as set forth in claim 1 of the present application.

From the Examiner's own comments, it is clear that a "normal" warm-up does not require the sensing of or the use of ambient temperature, because the Examiner has stated that the Bullock et al. reference "naturally implies" that some type of warm-up cycle will take place, but the Examiner also has acknowledged that the Bullock et al. reference does not disclose an ambient temperature sensor. Therefore, it is clear that whatever type of warm-up is assumed to take place in the Bullock et al. apparatus, it does not make use of an ambient temperature measurement. This is not surprising, since a normal warm-up cycle, which does not have to be conducted within a predetermined short time span, as in the case of a fast warm-up, merely takes as long as is required for the necessary temperature conditions to be reached. Typically, a warm-up cycle involves heating of the printhead or some component thereof, as the Examiner has noted. Typically, the temperature of whatever component is being heated is monitored, and whenever that component reaches the desired temperature, the warm-up cycle is considered to be completed. In such a normal warm-up cycle, there is no need for any type of control or acceleration of the heating, it simply proceeds as long as is required for

the heated component to reach a predetermined, desired temperature that is suitable for printing. Ambient temperature simply plays no role in such a normal warm-up cycle; if the printer happens to be located in a cool environment the warm-up cycle takes a little longer until the predetermined temperature is reached; if the printer is in a warm environment, the warm-up cycle will be shorter.

A need occasionally arises for a fast warm-up, namely a warm-up that can be conducted (completed) in under 30 seconds (see original specification p. 20, l.12). In such a fast warm-up, in contrast to a normal warm-up, ambient temperature is an important factor because the heating of the component is accelerated in order to achieve the warm-up within the short time span, and the extent to which the heating must be accelerated (by applying more heating energy within a shorter period of time) is directly dependent on the ambient temperature.

The Applicants have also recognized that in the context of a fast warm-up, other conditions are important, namely temperature-related conditions (i.e., other than the ambient temperature) history-related conditions, and user-related conditions. In accordance with the present invention, not only does the control unit implement the fast start dependent on the aforementioned ambient temperature measurement, but also dependent on at least two of these aforementioned predetermined conditions. There is no reason whatsoever to assume that whatever type of normal warm-up takes place in the Bullock et al. reference, it will make use of all of those factors.

The Examiner relied on the Barton reference to supply the teachings that are "missing" from the Bullock et al. reference. The Examiner relied on the Barton reference as disclosing a sensor connected to a drive unit for measurement of

ambient temperature, the sensor operating in combination with a printer memory. Applicants do not disagree that the Barton reference provides this general teaching, however, like the Bullock et al. reference, the Barton reference is completely silent as to the use of ambient temperature in the context of any type of warm-up cycle, much less in the context of a fast start.

Unlike the Bullock et al. reference, the Barton reference is quite explicit as to the sub-routines that are executed dependent on the ambient temperature measurement. As stated at column 3, lines 47-49 of the Barton reference, the sub-routines that are executed dependent on the ambient temperature are the printer's serving and printing routines. Further in that same paragraph, servicing routines are described as effecting periodic flushing, wiping and capping of the printhead, and printing sub-routines are described as the type being used to direct printing, such as sub-routines that are determinative of record media throughput, printhead carriage movement, and operation of the printhead, such as the print mode. In none of this detailed explanation of the sub-routines that are controlled dependent on ambient temperature is there any mention whatsoever of a warm-up cycle, much less a fast start warm-up. Applicants submit this is compatible with the teachings in the Bullock et al. reference noted by the Examiner that the contents stored in the memories 16 and 24 can be used to control "real time" *printing*. This refers to the actual printing operation, rather than anything that precedes the printing operation, such as a warm-up cycle. As discussed above, in a normal warm-up cycle, there is no need for any real time control, because a conventional warm-up cycle simply takes as long as is necessary for the heated component to reach a predetermined temperature.

Applicant therefore respectfully submits that if the Bullock et al. apparatus were modified in accordance with the teachings of Barton, the most that would occur is that real time printing in Bullock et al. would be controlled using an ambient temperature measurement as one of the controlled parameters. There is no teaching or suggestion in either of the Bullock et al. or Barton references to employ ambient temperature in a warm-up cycle, much less a fast start warm-up, and moreover there is no teaching or suggestion in either of those references to employ ambient temperature in such a situation in combination with at least two of the predetermined conditions that are set forth in claim 1 of the present application.

In view of the lack of any explicit discussion of how a warm-up cycle of any type, much less a fast start warm-up cycle, is conducted or should be conducted in either of the Bullock et al. or Barton references, Applicants respectfully submit the Examiner has not satisfied the rigorous standards for substantiating a rejection under 35 U.S.C. §103(a), with regard to the identification of clear teachings or guidance or motivation in the relied-upon references, that would allegedly make a combination of the teachings of those references obvious to a person of ordinary skill in the relevant technology.

The Federal Circuit stated in *In re Lee* 227 F.3d 1338, 61 U.S.P.Q. 2d 1430 (Fed. Cir. 2002):

> "The factual inquiry whether to combine references must be thorough and searching. ...It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with."

Similarly, quoting *C.R. Bard, Inc. v. M3 Systems, Inc.* 157 F.3d 1340, 1352, 48 U.S.P.Q. 2d 1225, 1232 (Fed. Cir. 1998), the Federal Circuit in *Brown & Williamson Tobacco Court v. Philip Morris, Inc.,* 229 F.3d 1120, 1124-1125, 56 U.S.P.Q. 2d 1456, 1459 (Fed. Cir. 2000) stated:

> [A] showing of a suggestion, teaching or motivation to combine the prior art references is an 'essential component of an obviousness holding'.

In *In re Dembiczak,* 175 F.3d 994,999, 50 U.S.P.Q. 2d 1614, 1617 (Fed. Cir. 1999) the Federal Circuit stated:

> Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.

Consistently, in *In re Rouffet,* 149 F.3d 1350, 1359, 47 U.S.P.Q. 2d 1453, 1459 (Fed. Cir. 1998), the Federal Circuit stated:

> [E]ven when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill in the art, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.

In *Winner International Royalty Corp. v. Wang,* 200 F.3d 1340, 1348-1349, 53 U.S.P.Q. 2d 1580, 1586 (Fed. Cir. 2000), the Federal Circuit stated:

> Although a reference need not expressly teach that the disclosure contained therein should be combined with another, ... the showing of combinability, in whatever form, must nevertheless be clear and particular.

Lastly, in *Crown Operations International, Ltd. v. Solutia, Inc.,* 289 F.3d 1367, 1376, 62 U.S.P.Q. 2d 1917 (Fed. Cir. 2002), the Federal Circuit stated:

> There must be a teaching or suggestion within the prior art, within the nature of the problem to be solved, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources, to select particular elements, and to combine them as combined by the inventor.

Claims 2-4, 6-8 and 10-12 add further structure to the non-obvious combination of claim 1, and are therefore patentable over the teachings of Bullock et al. and Barton for the same reasons discussed above in connection with claim 1.

As to the rejection of claims 5 and 9, Applicants do not dispute that the Berson reference provides a general teaching to encrypt a serial number, however, for the reasons noted above there is no basis whatsoever for a person of ordinary skill in the field of printer design to make use of this general teaching in Berson, in combination with the teachings of Bullock et al. and Barton, to arrive at the subject matter of claims 5 and 9, which embody the subject matter of claim 1 therein.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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